*भारतीय मानक*
***Indian Standard***

**IS 15622 : 2017**

**(Reaffirmed 2022)**

# प्रैस्ड सिरामिक टाइलें — विशिष्टि

*( पहला पुनरीक्षण )*

# Pressed Ceramic Tiles — Specification

*( First Revision )*

ICS 91.100.23

© BIS 2017

भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
मानक भवन, 9 बहादुरशाह ज़फर मार्ग, नई दिल्ली–110002
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI-110002
www.bis.org.in www.standardsbis.in

**August 2017** **Price Group 7**

Flooring, Wall Finishing and Roofing Sectional Committee, CED 05

## FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Flooring, Wall Finishing and Roofing Sectional Committee had been approved by the Civil Engineering Division Council.

The standard was first published in 2006 as a general specification for ceramic tiles for different water absorption categories to cover all the important requirements, superseding separate specifications for each category of ceramic tiles covered in IS 13753, IS 13754, IS 13755 and IS 13756. In addition to the above, the standard also incorporated the following:

a) Category of the ceramic tiles with water absorption less than 3 percent as per the existing IS 13756 was changed to two categories namely one for the range of water absorption 0.08 percent to 3 percent and another having range of less than 0.08 percent.
b) Category of the ceramic tiles with water absorption 6 percent to 10 percent was omitted which were covered in IS 13754.
c) Certain modular preferred sizes as well as non-modular sizes for the tiles having the varying water absorption were added.
d) Test requirements for the ceramic tiles having the different water absorption capacity were brought in line with latest practice being followed in the country.

In the last few years there has been an explosive growth in the demand and consumption of tiles, especially the vitrified tiles. With advances in manufacturing technology, new varieties have emerged such as rectified tiles, glazed and unglazed polished tiles, etc. These new varieties have different dimensional and surface properties compared to their previous counterparts. It was therefore necessary to modify the standard to include these new varieties.

Vitrified tiles were being produced in the country with special clay that was being imported. However, fairly good substitutes have now been found from local sources. Further, with rising input costs and the need for more energy efficient production, tile manufacturers are increasingly resorting to use of local raw materials that are available in close proximity to the manufacturing facilities. The use of locally available raw materials has led to some changes in product characteristics which have been addressed in this revision of standard.

In this revision of the standard, an effort has been made to make the standard aligned closer with the provisions in ISO 13006 : 2012 'Ceramic tiles—Definition, classification, characteristics and marking', to enable manufacturers to comply with international standards being followed in Europe and North America, thereby increases opportunities for export. However, slight deviations are being made, in view of geographical factors which determines the climatic and exposure conditions to which the tiles are subjected to. The variations are also due to technological factors associated with the construction practices being followed in laying and in the manner of use of ceramic tiles in India.

The following are the major deviations/variations from ISO 13006:

a) In view of demand for rectified tiles that facilitates joint less flooring, separate dimensional tolerances have been specified for rectified and unrectified tiles unlike in ISO 13006.
b) In view of conditions to which tiles are subjected to during laying and in use (possibility of discoloration and staining from cement slurry, spillage, splitting, etc), classified tiles with lower absorption have been covered as compared to similar classification in ISO 13006 for Group B Ia ($E \leq 0.08$) and Group B Ib ($0.08 < E \leq 3$).
c) Some popular modular and non-modular sizes of tiles have been specified unlike in ISO 13006.
d) Requirements of bulk density have been specified for Group B Ia ($E \leq 0.08$) and Group B Ib ($0.08 < E \leq 3$).
e) Requirements of characteristics of tiles like moisture expansion, scratch hardness of surface, resistance

(*Continued on third cover*)

# *Indian Standard*

# PRESSED CERAMIC TILES — SPECIFICATION

## *( First Revision )*

## 1 SCOPE

**1.1** This standard specifies sizes, dimensional tolerances, surface quality, mechanical, physical and chemical requirements, and marking of pressed ceramic tiles.

**1.2** The standard is applicable for pressed ceramic glazed or unglazed tiles of first quality (also known as premium quality) for use as both floor and wall coverings**.** For the purpose of definition**,** first quality (premium quality) tiles are tiles that are fairly free from any kind of surface or dimensional defects that may otherwise impair the aesthetics or functionality of the product. These tiles should conform to dimensional, physical, chemical and surface requirements as defined in this standard.

**1.3** The standard does not cover ceramic tiles manufactured by other processes, like extrusion process.

## 2 REFERENCES

The standards given at Annex A contain provisions which through reference in this text, constitute provisions of this standard**.** At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards.

## 3 DEFINITIONS

For the purpose of this standard the definitions given in IS 13712 and the following shall apply.

**3.1 Spacer Lugs —** Lugs are projections located along certain edges of tiles so that when two tiles are placed together in line, the lugs on adjacent edges separate the tiles. Lugs are positioned so that the joint between the tiles may be filled with grout without the lugs remaining exposed.

## 4 CLASSIFICATION

**4.1** Pressed ceramic tiles, based on their water absorptions shall be classified as Group B Ia, Group B Ib, Group B IIa, Group B IIb and Group B III as defined in IS 13712.

**4.2** The surface of tiles can be smooth, profiled, wavy, decorated or finished in any other way. It can be unglazed (UGL) or glazed (GL). Glazed tiles shall be of glossy, matt or semi-matt finish. The surface may also be polished (P), semi-polished (lappato or lapped or honed finish) (SP), or unpolished (UP). The surface and mechanical characteristics of glazed, unglazed, unpolished, polished and semi-polished tiles are different and shall be as defined in this standard. Surface specifications for certain special finishes, such as metallic or lustre are not defined in the standard and these shall be as agreed to between the manufacturer and the purchaser.

**4.3** The edges of the tile may be rectified (R) or unrectified (UR). Unrectified tiles are tiles that undergo no further dimensional processing after the tiles are fired. Rectified tiles are tiles whose edges have been cut or ground to a precise dimension after the tiles have been fired. The dimensional tolerances of rectified and unrectified tiles are different and shall be as defined in this standard.

**4.4** Tiles may have spacer lugs.

## 5 SHAPES AND SIZES

**5.1** Unless otherwise specified the shape and size of pressed ceramic tiles shall be as given below (*see also* Fig. 1 and Fig. 2):

a) *Tables 1 and 2* — For tiles with water absorption $E > 10$ percent (Group B III),
b) *Tables 3 and 4* — For tiles with water absorption $6 < E \leq 10$ percent (Group B II b), $3 < E \leq 6$ percent (Group B IIa), $0.08 < E \leq 3$ percent (Group BIb), and $E \leq 0.08$ percent (Group B Ia).

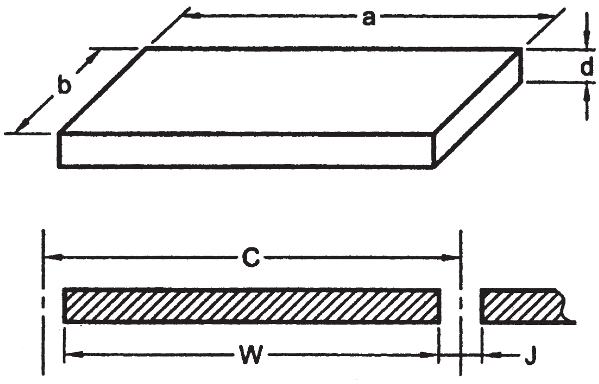
NOTES

**1** B denotes shaping method (Pressed tiles) as defined in IS 13712.

**2** Table 1 and Table 3 give the most common modular sizes.

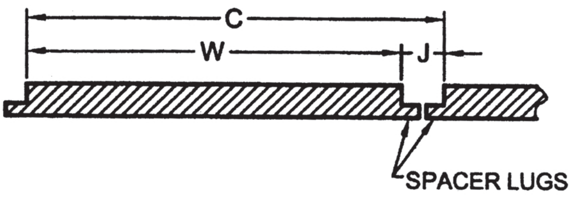
**3** Table 2 and Table 4 give the most common non-modular sizes.

**5.2** Pressed tiles may also be manufactured in dimensions other than those given in Tables 1 to 4. In such cases the work size shall be as declared by the manufacturer. The relevant requirements for work size and thickness given in the respective tables shall however apply.



Co-ordinating size (*C*) = Work size (*W*) + Joint width (*J*) Work size (*W*) = Dimensions of the visible faces *a* and *b*

FIG. 1 TILE



Co-ordinating size (*C*) = Work size (*W*) + Joint width (J) Work size (*W*) = Dimensions of the visible faces *a* and *b*

FIG. 2 TILE WITH SPACER LUGS

### 5.3 Spacer Lug

**5.3.1** Spacer lug projection where provided in the tiles, shall normally be of 0.6 mm. The lugs on adjacent edges shall separate the tiles by a distance of not less than the specified width of joints (*see* Fig. 2).

**5.3.2** Pressed tiles may be made with other spacer lug systems and in such cases the manufacturer's work size shall apply.

NOTE — Some tiles have one or more manufacturing projections along certain edges and smaller than 0.3 mm. These are not intended as spacer lugs and shall not be used to space joints.

## 6 REQUIREMENTS

Dimensional, physical and chemical requirements of the tiles shall be as given below:

Tables 5 to 9 — For tiles of Group B III, B IIb, B IIa, B Ib and B Ia, respectively

## 7 SAMPLING

Sampling and basis for acceptance shall be in accordance with IS 13630 (Part 15).

**Table 1 Modular Preferred Size for Tiles with Water Absorption, *E* > 10 Percent (Group B III)**

(*Clauses* 5.1 *and* 5.2)

| Sl No. | Coordinating Size (*C*) cm | Work Size (*W*) Length (*a*) | Work Size (*W*) Width (*b*) | Thickness (*d* ) |
|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) |
| i) | M10 × 10 | The manufacturer shall choose the work size in order to allow a nominal joint width between 1.5 mm and 5 mm | | The thickness shall be specified by the manufacturer. It includes the profile on the visible face and on the rear side |
| ii) | M15 × 15 | | | |
| iii) | M20 × 10 | | | |
| iv) | M20 × 15 | | | |
| v) | M20 × 20 | | | |
| vi) | M20 × 30 | | | |
| vii) | M20 × 40 | | | |
| viii) | M25 × 25 | | | |
| ix) | M30 × 15 | | | |
| x) | M30 × 30 | | | |
| xi) | M30 × 45 | | | |
| xii) | M30 × 60 | | | |
| xiii) | M30 × 75 | | | |
| xiv) | M 30 × 90 | | | |
| xv) | M 40 × 80 | | | |
| xvi) | M 45 × 90 | | | |
| xvii) | M 60 × 90 | | | |
| xviii) | M 60 × 120 | | | |

### Table 2 Non-modular Sizes for Tiles with Water Absorption, $E > 10$ Percent (Group B III)

(*Clause* 5.1)

| Sl No. | Nominal Size (*N*) cm | Work Size (*W*) | | Thickness (*d* ) |
|---|---|---|---|---|
| | | Length (*a*) | Width (*b*) | |
| (1) | (2) | (3) | (4) | (5) |
| i) | 10.8 × 10.8 | The manufacturer shall choose the work size in such a way that the difference between the work size and the nominal size is not more than ± 2 percent or 5 mm, whichever is lower<br>For spacer lug tiles, one work size shall apply for each nominal size within the limits mentioned above | | The thickness shall be specified by the manufacturer. It includes the profile on the visible face and on the rear side |
| ii) | 15 × 7.5 | | | |
| iii) | 15.2 × 7.6 | | | |
| iv) | 15.2 × 15.2 | | | |
| v) | 21.6 × 10.8 | | | |
| vi) | 25 × 33 | | | |
| vii) | 31.5 × 42 | | | |
| viii) | 32 × 32 | | | |
| ix) | 25 × 38 | | | |
| x) | 32 × 40 | | | |
| xi) | 32 × 48 | | | |
| xii) | 32 × 60 | | | |
| xiii) | 33 × 33 | | | |
| xiv) | 33 × 48 | | | |
| xv) | 33 × 60 | | | |
| xvi) | 33 × 90 | | | |

### Table 3 Modular Preferred Sizes for Tiles with Water Absorption, $6 < E \leq 10$ Percent (Group B IIb), $3 < E \leq 6$ Percent (Group B IIa), $0.08 < E \leq 3$ Percent (Group B Ib), $E \leq 0.08$ Percent (Group B Ia)

(*Clause* 5.1)

| Sl No. | Coordinating Size (*C*) cm | Work Size (*W*) | | Thickness (*d*) |
|---|---|---|---|---|
| | | Length (*a*) | Width (*b*) | |
| (1) | (2) | (3) | (4) | (5) |
| i) | M10 × 10 | The manufacturer shall choose the work size in order to allow a nominal joint width between 2 mm and 5 mm | | The thickness shall be specified by the manufacturer. It includes the profile on the visible face and on the rear side |
| ii) | M15 × 15 | | | |
| iii) | M15 × 10 | | | |
| iv) | M20 × 10 | | | |
| v) | M20 × 15 | | | |
| vi) | M20 × 20 | | | |
| vii) | M25 × 25 | | | |
| viii) | M30 × 30 | | | |
| ix) | M30 × 45 | | | |
| x) | M40 × 30 | | | |
| xi) | M40 × 40 | | | |
| xii) | M45 × 45 | | | |
| xiii) | M 40 × 80 | | | |
| xiv) | M45 × 90 | | | |
| xv) | M50 × 50 | | | |
| xvi) | M60 × 60 | | | |
| xvii) | M60 × 90 | | | |
| xviii) | M80 × 80 | | | |
| xix) | M90 × 90 | | | |
| xx) | M60 × 120 | | | |
| xxi) | M100 × 100 | | | |
| xxii) | M90 × 120 | | | |
| xxiii) | M120 × 120 | | | |

## Table 4 Non-modular Sizes for Tiles with Water Absorption, $6 < E \le 10$ Percent (Group B IIb), $3 < E \le 6$ Percent (Group B IIa), $0.08 < E \le 3$ Percent (Group B Ib), $E \le 0.08$ Percent (Group B Ia)

(*Clause* 5.1)

| Sl No. | Nominal Size (*N*) cm | Work Size (*W*) | | Thickness (*d*) |
|---|---|---|---|---|
| | | Length (*a*) | Width (*b*) | |
| (1) | (2) | (3) | (4) | (5) |
| i) | 15 × 7.5 | The manufacturer shall choose the work size in such a way that the difference between the work size and the nominal size is not more than ± 2 percent or 5 mm, whichever is lower | | The thickness shall be specified by the manufacturer. It includes the profile on the visible face and on the rear side |
| ii) | 15.2 × 7.6 | | | |
| iii) | 15.2 × 15.2 | | | |
| iv) | 30.6 × 30.6 | | | |
| v) | 31.5 × 31.5 | | | |
| vi) | 32 × 32 | | | |
| vii) | 33 × 48 | | | |
| viii) | 40.6 × 40.6 | | | |
| ix) | 60.5 × 60.5 | | | |
| x) | 81.5 × 81.5 | | | |

## Table 5 Test Requirements for Tiles with Water Absorption, $E > 10$ Percent (Group B III)

(*Clause* 6)

| Sl No. | Characteristic | Requirement | Method of Test, Ref to Part of IS 13630 |
|---|---|---|---|
| (1) | (2) | (3) | (4) |
| i) | Dimensions and surface quality : | | (Part 1) |
| | a) *Length and width:* | | |
| | 1) The deviation in percent of the average size of each tile (2 or 4 sides) from the work size (*W*) : | | |
| | i) Un-rectified | $N \le 15$ cm : ± 0.5<br>$N > 15$ cm : ± 0.4 | |
| | ii) Rectified | $N \le 15$ cm : ± 0.2<br>$N > 15$ cm : ± 0.2 | |
| | NOTES<br>**1** '*N*' represents the nominal dimension of tile.<br>**2** For tiles with spacer lugs, the requirement shall be $^{+0.6}_{-0.3}$. | | |
| | 2) The deviation in percent of the average size of each tile (2 or 4 sides) from the average of the 10 test specimens (20 or 40 sides) : | | |
| | i) Un-rectified | $N \le 15$ cm + 0.4<br>$N > 15$ cm ± 0.3 | |
| | ii) Rectified | $N \le 15$ cm ± 0.3<br>$N > 15$ cm ± 0.2 | |
| | NOTE — For tiles with spacer lugs, the requirement shall be ± 0.25. | | |
| | b) *Thickness* : | | |
| | The deviation in percent of the average thickness of each tile from the work size thickness : | | |
| | 1) $N \le 15$ cm | ± 7.0 | |
| | 2) $N > 15$ cm | ± 5.0 | |
| | c) *Straightness of sides*$^{1)}$ *(Facial sides) :* | | |
| | The maximum deviation from straightness, in percent related to the corresponding work size : | | |
| | 1) Un-rectified | ± 0.2 | |
| | 2) Rectified | ± 0.15 | |
| | d) *Rectangularity*$^{1)}$ *:* | | |
| | The maximum deviation from rectangularity, in percent related to the corresponding work size | | |
| | 1) Un-rectified | ± 0.3 | |
| | 2) Rectified | ± 0.2 | |
| | NOTE — For tiles with spacer lugs, the requirement shall be ± 0.3. | | |
| | e) *Surface flatness :* | | |
| | The maximum deviation from flatness, in percent: | | |
| | 1) Centre curvature, related to diagonal calculated from the work sizes | ± 0.3 | |

**Table 5 — (*Concluded*)**

| Sl No.<br>(1) | Characteristic<br>(2) | Requirement<br>(3) | Method of Test, Ref to Part of IS 13630<br>(4) |
|---|---|---|---|
| | 2) Edge curvature, related to the corresponding work size | ± 0.3 | (Part 1) |
| | 3) Warpage, related to diagonal calculated from the work sizes | ± 0.3 | |
| | f) *Surface Quality*[2]: | Minimum 95 percent of tiles shall be free from visible defects that would impair the appearance of a major area of the tiles | |
| ii) | Physical Properties : | | |
| | a) Water absorption, percent by weight | Average > 10 percent. (When the value exceeds 20 percent this shall be indicated by the manufacturer).<br>Individual 9 percent, *Min* | (Part 2) |
| | b) Modulus of rupture, in N/mm$^2$ | 12, Minimum for thickness ≥ 7.5 mm<br>15, Minimum for thickness < 7.5 mm | (Part 6) |
| | c) Breaking strength, in N | 200, Minimum for thickness < 7.5 mm<br>600, Minimum for thickness ≥ 7.5 mm | (Part 6) |
| | d) Moisture expansion, in mm/m | 0.04, *Max* | (Part 3) |
| | e) Scratch hardness of surface (Mohs') | 3, *Min* | (Part 13) |
| | f) Co-efficient of linear thermal expansion from ambient temperature to 100°C | $9 \times 10^{-6}$ K$^{-1}$, *Max* | (Part 4) |
| | g) Thermal shock resistance | 10 cycles, *Min* | (Part 5) |
| | h) Impact resistance — Coefficient of restitution | 0.55, *Min* | (Part 14) |
| | j) Co-efficient of friction — Tiles intended for use on floors | Where required manufacturer to declare value | Manufacturer to declare test method(s) |
| | k) Crazing resistance[3] | 4 cycles at 7.5 bar, *Min* | (Part 9) |
| | m) Resistance to surface abrasion of glazed tiles Class I to Class V [3]<br>(Applicable for floor tiles only) | Class II, *Min* | (Part 11) |
| iii) | Chemical properties : | | |
| | a) Resistance to staining of glazed tiles | Class 1, *Min* | (Part 8) |
| | b) Resistance to household chemicals and swimming pool water cleansers except to cleansing agents containing hydrofluoric acid and its compounds — Glazed tiles | Class AA, *Min* | (Part 8) |
| | c) Resistance to acids and alkalis (with the exception of hydrofluoric acid and its compounds) — Glazed tiles | Required, if agreed according to the chemical resistance class indicated by the manufacturer | (Part 8) |

---

[1] Not applicable for tiles have curved or irregular shape.

[2] Because of firing, slight variation in shade or colour is unavoidable and is inherent to the manufacturing process. This is not to be construed as a defect, so long as it doesn't disturb the overall aesthetics. Also, variations in design or colour or shade that are intentionally introduced and spots or colours introduced for decorative purposes are not to be considered as a defect.

[3] Certain decorative effects may have a tendency to craze. These shall be identified by the manufacturer, in which case the crazing test is not applicable.

### Table 6 Test Requirements for Tiles with Water Absorption, $6 < E \leq 10$ Percent (Group B IIb)

(*Clause* 6)

| Sl No. | Characteristic | Nominal Size ($N$) | | Method of Test, Ref to Part of IS 13630 |
|---|---|---|---|---|
| | | $N \leq 20$ cm | $N > 20$ cm | |
| (1) | (2) | (3) | (4) | (5) |
| i) | Dimensions and surface quality : | | | (Part 1) |
| | a) *Length and width:* | | | |
| | 1) The deviation in percent of the average size of each tile (2 or 4 sides) from the work size ($W$) : | | | |
| | i) Un-rectified | ± 0.6 | ± 0.4 | |
| | ii) Rectified | ± 0.3 | ± 0.1 | |
| | 2) The deviation in percent of the average size of each tile (2 or 4 sides) from the average size of the 10 test specimen (20 or 40 sides): | | | |
| | i) Un-rectified | ± 0.5 | ± 0.4 | |
| | ii) Rectified | ± 0.2 | ± 0.1 | |
| | b) *Thickness:* The deviation, in percent of the average thickness of each tile from the work size thickness. | ± 10 | ± 5 | |
| | c) *Straightness of sides* [1](*Facial sides*): The maximum deviation from straightness, in percent related to the corresponding work sizes : | | | |
| | 1) Un-rectified | ± 0.5 | ± 0.3 | |
| | 2) Rectified | ± 0.3 | ± 0.1 | |
| | d) *Rectangularity*[1]: The maximum deviation from rectangularity in percent related to the corresponding work sizes: | | | |
| | 1) Un-rectified | ± 0.6 | ± 0.3 | |
| | 2) Rectified | ± 0.3 | ± 0.1 | |
| | e) *Surface flatness* : The maximum deviation from flatness, in percent: | | | |
| | 1) Centre curvature, related to diagonal calculated from the work sizes | ± 0.75 | ± 0.5 | |
| | 2) Edge curvature, related to the corresponding work size | ± 0.75 | ± 0.5 | |
| | 3) Warpage, related to the diagonal calculated from the work sizes | ± 0.75 | ± 0.5 | |
| | f) Surface quality[2] | Minimum 95 percent of tiles shall be free from visible defects that would impair the appearance of a major area of the tiles | | |
| ii) | Physical properties : | | | |
| | a) Water absorption percent by weight | Average $6 < E \leq 10$, Individual 10.5, *Max* | | (Part 2) |
| | b) Modulus of rupture, in N/mm² | Average 18, Individual 16, *Min* | | (Part 6) |
| | c) Breaking strength, in N | 500, *Min* for thickness < 7.5 mm<br>800, *Min* for thickness ≥ 7.5 mm | | (Part 6) |
| | d) Moisture expansion, in mm/m | 0.04, *Max* | | (Part 3) |
| | e) Scratch hardness of surface[3] (Mohs' scale): | 4, *Min* | | (Part 13) |
| | f) Resistance to surface abrasion of glazed tiles Class I to V[3] (Applicable for floor application only) | Class II, *Min* | | (Part 11) |
| | g) Co-efficient of linear thermal expansion from ambient temperature to 100° C ($K^{-1}$). | $9 \times 10^{-6}$, *Max* | | (Part 4) |
| | h) Thermal shock resistance | 10 cycles, *Min* | | (Part 5) |
| | j) Crazing resistance [4] | 4 cycles at 7.5 Bar, *Min* | | (Part 9) |
| | k) Impact resistance — Coefficient of restitution | 0.55, *Min* | | (Part 14) |
| | m) Coefficient of friction — Tiles intended for use on floors | Where required manufacturer to declare value | | Manufacturer to declare test method(s) |
| | n) Frost resistance | Required, if agreed to between manufacturer and purchaser | | (Part 10) |
| | p) Resistance to deep abrasion of unglazed tiles, volume of material removed in cubic millimeter[3] (Applicable for floor application only) | 540, *Max* | | (Part 12) |
| iii) | Chemical properties : | | | |
| | a) Resistance to staining of glazed tiles | Class 1, *Min* | | (Part 8) |
| | b) Resistance to household chemicals and swimming pool water cleansers except to cleansing agents containing hydrofluoric acid and its compounds — Glazed tiles | Class AA, *Min* | | (Part 8) |
| | c) Resistance to acids and alkalis (with the exceptions of hydrofluoric acid and its compounds) — Glazed tiles | Required, if agreed according to the chemical resistance class indicated by the manufacturer | | (Part 8) |

---

[1] Not applicable for tiles have curved or irregular shape.

[2] Because of firing, slight variation in shade or colour is unavoidable and is inherent to the manufacturing process. This is not to be construed as a defect, so long as it doesn't disturb the overall aesthetics. Also, variations in design or colour or shade that are intentionally introduced and spots or colours introduced for decorative purposes are not to be considered as a defect.

[3] For commercial and high traffic applications it is recommended to use higher class than the minimum class prescribed in this standard.

[4] Certain decorative effects may have a tendency to craze. These shall be identified by the manufacturer, in which case the crazing test is not applicable.

### Table 7 Test Requirements for Tiles with Water Absorption, $3 < E \leq 6$ Percent (Group B IIa)

(*Clause* 6)

| Sl No. | Characteristic | Nominal Size ($N$) | | Method of Test, Ref to Part of IS 13630 |
|---|---|---|---|---|
| | | $N \leq 20$ cm | $N > 20$ cm | |
| (1) | (2) | (3) | (4) | (5) |
| i) | Dimensions and surface quality : | | | (Part 1) |
| a) | *Length and width:* | | | |
| | 1) The deviation in percent of the average size of each tile (2 or 4 sides) from the work size ($W$) : | | | |
| | i) Un-rectified | ± 0.6 | ± 0.4 | |
| | ii) Rectified | ± 0.3 | ± 0.1 | |
| | 2) The deviation in percent of the average size of each tile (2 or 4 sides) from the average size of the 10 test specimen (20 or 40 sides): | | | |
| | i) Un-rectified | ± 0.5 | ± 0.4 | |
| | ii) Rectified | ± 0.2 | ± 0.1 | |
| b) | *Thickness:*<br>The deviation, in percent of the average thickness of each tile from the work size thickness | ± 10 | ± 5 | |
| c) | *Straightness of sides* [1]*(Facial sides)*:<br>The maximum deviation from straightness, in percent related to the corresponding work sizes | | | |
| | 1) Un-rectified | ± 0.5 | ± 0.3 | |
| | 2) Rectified | ± 0.3 | ± 0.1 | |
| d) | *Rectangularity*[1]:<br>The maximum deviation from rectangularity in percent related to the corresponding work sizes : | | | |
| | 1) Un-rectified | ± 0.6 | ± 0.3 | |
| | 2) Rectified | ± 0.3 | ± 0.1 | |
| e) | *Surface flatness* :<br>The maximum deviation from flatness, in percent: | | | |
| | 1) Centre curvature, related to diagonal calculated from the work sizes | ± 0.75 | ± 0.5 | |
| | 2) Edge curvature, related to the corresponding work size | ± 0.75 | ± 0.5 | |
| | 3) Warpage, related to the diagonal calculated from the work sizes | ± 0.75 | ± 0.5 | |
| f) | Surface quality[2] | Minimum 95% of tiles shall be free from visible defects that would impair the appearance of a major area of the tiles | | |
| ii) | Physical properties : | | | |
| a) | Water absorption percent by weight | Average $3 < E \leq 6$, Individual 6.2, *Max* | | (Part 2) |
| b) | Modulus of rupture, in N/mm² | Average 22, Individual 20, *Min* | | (Part 6) |
| c) | Breaking strength, in N | 600, *Minimum* for thickness < 7.5 mm<br>1 000, *Minimum* for thickness ≥ 7.5 mm | | (Part 6) |
| d) | Moisture expansion, in mm/m | 0.03, *Max* | | (Part 3) |
| e) | Scratch hardness of surface[3] (Mohs' scale) | 4, *Min* | | (Part 13) |
| f) | Resistance to surface abrasion of glazed tiles Class I to V[3] (Applicable for floor application only) | Class II, *Min* | | (Part 11) |
| g) | Co-efficient of linear thermal expansion from ambient temperature to 100° C ($K^{-1}$). | $9 \times 10^{-6}$, *Max* | | (Part 4) |
| h) | Thermal shock resistance | 10 cycles, *Min* | | (Part 5) |
| j) | Crazing resistance [4] | 4 cycles at 7.5 Bar, *Min* | | (Part 9) |
| k) | Impact resistance — Coefficient of restitution | 0.55, *Min* | | (Part 14) |
| m) | Coefficient of friction — Tiles intended for use on floors | Where required manufacturer to declare value | | Manufacturer to declare Test Method(s) |
| n) | Frost resistance | Required, if agreed to between manufacturer and purchaser | | (Part 10) |
| p) | Resistance to deep abrasion of unglazed tiles, volume of material removed in cubic millimeter[3] (Applicable for floor application only) | 345, *Max* | | (Part 12) |
| iii) | Chemical properties : | | | |
| a) | Resistance to staining of glazed tiles | Class 1, *Min* | | (Part 8) |
| b) | Resistance to household chemicals and swimming pool water cleansers except to cleansing agents containing hydrofluoric acid and its compounds — Glazed tiles | Class AA, *Min* | | (Part 8) |
| c) | Resistance to acids and alkalis (with the exceptions of hydrofluoric acid and its compounds) — Glazed tiles | Required, if agreed according to the chemical resistance class indicated by the manufacturer. | | (Part 8) |

---

[1] Not applicable for tiles have curved or irregular shape.

[2] Because of firing, slight variation in shade or colour is unavoidable and is inherent to the manufacturing process. This is not to be construed as a defect, so long as it doesn't disturb the overall aesthetics. Also, variations in design or colour or shade that are intentionally introduced and spots or colours introduced for decorative purposes are not to be considered as a defect.

[3] For commercial and high traffic applications, it is recommended to use higher class than the minimum class prescribed in this standard.

[4] Certain decorative effects may have a tendency to craze. These shall be identified by the manufacturer, in which case the crazing test is not applicable.

## Table 8 Test Requirements for Tiles with Water Absorption, $0.08 < E \le 3$ percent (Group B Ib)

(*Clause* 6)

| Sl No. | Characteristic | Nominal Size ($N$) | | Method of Test, Ref to Part of IS 13630 |
|---|---|---|---|---|
| | | $N \le 20$ cm | $N > 20$ cm | |
| (1) | (2) | (3) | (4) | (5) |
| i) | Dimensions and surface quality : | | | |
| | a) *Length and width:* | | | (Part 1) |
| | 1) The deviation in percent of the average size of each tile (2 or 4 sides) from the work size ($W$) : | | | |
| | i) Un-rectified | ± 0.6 | ± 0.4 | |
| | ii) Rectified | ± 0.3 | ± 0.1 | |
| | 2) The deviation in percent of the average size of each tile (2 or 4 sides) from the average size of the 10 test specimen (20 or 40 sides) | | | |
| | i) Un-rectified | ± 0.5 | ± 0.4 | |
| | ii) Rectified | ± 0.2 | ± 0.1 | |
| | b) *Thickness:* The deviation, in percent of the average thickness of each tile from the work size thickness | ± 10 | ± 5 | |
| | c) *Straightness of sides* [1] (*Facial sides*): The maximum deviation from straightness, in percent related to the corresponding work sizes : | | | |
| | 1) Un-rectified | ± 0.5 | ± 0.3 | |
| | 2) Rectified | ± 0.3 | ± 0.1 | |
| | d) *Rectangularity*[1]: The maximum deviation from rectangularity in percent related to the corresponding work sizes : | | | |
| | 1) Un-rectified | ± 0.6 | ± 0.3 | |
| | 2) Rectified | ± 0.3 | ± 0.1 | |
| | e) *Surface flatness*: The maximum deviation from flatness, in percent: | | | |
| | 1) Centre curvature, related to diagonal calculated from the work sizes | ± 0.75 | ± 0.5 | |
| | 2) Edge curvature, related to the corresponding work size | ± 0.75 | ± 0.5 | |
| | 3) Warpage, related to the diagonal calculated from the work sizes | ± 0.75 | ± 0.5 | |
| | f) Surface quality[2] | Minimum 95 percent of tiles shall be free from visible defects that would impair the appearance of a major area of the tiles | | |
| ii) | Physical properties : | | | |
| | a) Water absorption, percent by weight | Average $0.08 < E \le 3$, Individual 3.3, *Max* | | (Part 2) |
| | b) Modulus of rupture, in N/mm$^2$ | Average 30, Individual 27, *Min* | | (Part 6) |
| | c) Breaking strength, in N | 700, Minimum for thickness < 7.5 mm<br>1 100, Minimum for thickness ≥ 7.5 mm | | (Part 6) |
| | d) Moisture expansion in mm/m | 0.02, *Max* | | (Part 3) |
| | e) Scratch hardness of surface[3] (Mohs' scale) : | 5, *Min* | | (Part 13) |
| | f) Resistance to surface abrasion of glazed tiles Class I to V[3] (Applicable for floor application only) | Class II, *Min* | | (Part 11) |
| | g) Coefficient of linear thermal expansion from ambient temperature to 100° C (K$^{-1}$). | $7 \times 10^{-6}$, *Max* | | (Part 4) |
| | h) Thermal shock resistance | 10 cycles, *Min* | | (Part 5) |
| | j) Crazing resistance [4] | 4 cycles at 7.5 Bar, *Min* | | (Part 9) |
| | k) Impact resistance — Coefficient of restitution | 0.55, *Min* | | (Part 14) |
| | m) Coefficient of friction — Tiles intended for use on floors | Where required manufacturer to declare value | | Manufacturer to declare Test Method(s) |
| | n) Frost resistance | Required, if agreed to between manufacturer and purchaser | | (Part 10) |
| | p) Resistance to deep abrasion of unglazed tiles, volume of material removed in cubic millimetre[3] (Applicable for floor application only) | 175, *Max* | | (Part 12) |
| | q) Bulk density, in g/cc | 2.0, *Min* | | (Part 2) |
| iii) | Chemical properties : | | | |
| | a) Resistance to staining of glazed tiles | Class 1, *Min* | | (Part 8) |
| | b) Resistance to household chemicals and swimming pool water cleansers except to cleansing agents containing hydrofluoric acid and its compounds — Glazed tiles | Class AA, *Min* | | (Part 8) |
| | c) Resistance to acids and alkalis (with the exceptions of hydrofluoric acid and its compounds) — Glazed tiles | Required, if agreed according to the chemical resistance class indicated by the manufacturer | | (Part 8) |

---

[1] Not applicable for tiles have curved or irregular shape.

[2] Because of firing, slight variation in shade or colour is unavoidable and is inherent to the manufacturing process. This is not to be construed as a defect, so long as it doesn't disturb the overall aesthetics. Also, variations in design or colour or shade that are intentionally introduced and spots or colours introduced for decorative purposes are not to be considered as a defect.

[3] For commercial and high traffic applications it is recommended to use higher class than the minimum class prescribed in this standard.

[4] Certain decorative effects may have a tendency to craze. These shall be identified by the manufacturer, in which case the crazing test is not applicable.

## Table 9 Test Requirements for Tiles with Water Absorption, $E \le 0.08$ Percent (Group B Ia)

(*Clause* 6)

| Sl No. | Characteristic | Nominal Size ($N$) | | Method of Test, Ref to Part of IS 13630 |
|---|---|---|---|---|
| | | $N \le 20$ cm | $N > 20$ cm | |
| (1) | (2) | (3) | (4) | (5) |
| i) | Dimensions and surface quality : | | | (Part 1) |
| a) | *Length and width:* | | | |
| | 1) The deviation in percent of the average size of each tile (2 or 4 sides) from the work size ($W$) : | | | |
| | i) Un-rectified | ± 0.6 | ± 0.4 | |
| | ii) Rectified | ± 0.3 | ± 0.1 | |
| | 2) The deviation in percent of the average size of each tile (2 or 4 sides) from the average size of the 10 test specimen (20 or 40 sides) | | | |
| | i) Un-rectified | ± 0.5 | ± 0.4 | |
| | ii) Rectified | ± 0.2 | ± 0.1 | |
| b) | *Thickness:*<br>The deviation, in percent of the average thickness of each tile from the work size thickness | ± 10 | ± 5 | |
| c) | *Straightness of sides* [1](*Facial sides*):<br>The maximum deviation from straightness, in percent related to the corresponding work sizes : | | | |
| | 1) Un-rectified | ± 0.5 | ± 0.3 | |
| | 2) Rectified | ± 0.3 | ± 0.1 | |
| d) | *Rectangularity*[1]:<br>The maximum deviation from rectangularity in percent related to the corresponding work sizes : | | | |
| | 1) Un-rectified | ± 0.6 | ± 0.3 | |
| | 2) Rectified | ± 0.3 | ± 0.1 | |
| e) | *Surface flatness* :<br>The maximum deviation from flatness, in percent: | | | |
| | 1) Centre curvature, related to diagonal calculated from the work sizes | ± 0.75 | ± 0.5 | |
| | 2) Edge curvature, related to the corresponding work size | ± 0.75 | ± 0.5 | |
| | 3) Warpage, related to the diagonal calculated from the work sizes | ± 0.75 | ± 0.5 | |
| f) | Surface quality[2] | Minimum 95 per cent of tiles shall be free from visible defects that would impair the appearance of a major area of the tiles | | |
| ii) | Physical properties : | | | |
| a) | Water absorption percent by weight | Average ≤ 0.08, Individual 0.1, *Max* | | (Part 2) |
| b) | Modulus of rupture, in N/mm² | Average 35, Individual 32, *Min* | | (Part 6) |
| c) | Breaking strength, in N | 700, Minimum for thickness < 7.5 mm<br>1 300, Minimum for thickness ≥ 7.5 mm | | (Part 6) |
| d) | Moisture expansion, in mm/m | 0.02, *Max* | | (Part 3) |
| e) | Scratch hardness of surface[3] (Mohs' scale) | 5, *Min* | | (Part 13) |
| f) | Resistance to surface abrasion of glazed tiles Class I to V[3] (Applicable for floor application only) | Class II, *Min* | | (Part 11) |
| g) | Co-efficient of linear thermal expansion from ambient temperature to 100° C ($K^{-1}$). | $6 \times 10^{-6}$, *Max* | | (Part 4) |
| h) | Thermal shock resistance | 10 cycles, *Min* | | (Part 5) |
| j) | Crazing resistance [4] | 4 cycles at 7.5 Bar, *Min* | | (Part 9) |
| k) | Impact resistance — Coefficient of restitution | 0.55, *Min* | | (Part 14) |
| m) | Coefficient of friction — Tiles intended for use on floors | Where required manufacturer to declare value | | Manufacturer to declare Test Method(s) |
| n) | Frost resistance | Required, if agreed to between manufacturer and purchaser | | (Part 10) |
| p) | Resistance to deep abrasion of unglazed tiles, volume of material removed in cubic millimetre[3] (Applicable for floor application only) | 140, *Max* | | (Part 12) |
| q) | Bulk density, in g/cc | 2.2, *Min* | | (Part 2) |
| iii) | Chemical properties : | | | |
| a) | Resistance to staining : | | | |
| | 1) Glazed tiles | Class 1, *Min* | | (Part 8) |
| | 2) Unglazed tiles | Class 2, *Min* | | |

**Table 9 — (*Concluded*)**

| Sl No. | Characteristic | Nominal Size (*N*) | | Method of Test, Ref to Part of IS 13630 |
|---|---|---|---|---|
| | | $N \leq 20$ cm | $N > 20$ cm | |
| (1) | (2) | (3) | (4) | (5) |
| | b) Resistance to household chemicals and swimming pool water cleansers except to cleansing agents containing hydrofluoric acid and its compounds — glazed tiles: | | | |
| | 1) Glazed tiles | Class AA, *Min* | | (Part 8) |
| | 2) Unglazed tiles | Required, if agreed according to the chemical resistance class indicated by the manufacturer | | (Part 7) |
| | c) Resistance to acids and alkalis (with the exceptions of hydrofluoric acid and its compounds) — Glazed tiles | | | |
| | 1) Glazed tiles | Required, if agreed according to the chemical resistance class indicated by the manufacturer | | (Part 8) |
| | 2) Unglazed tiles | Required, if agreed according to the chemical resistance class indicated by the manufacturer | | (Part 7) |

---

[1] Not applicable for tiles have curved or irregular shape.

[2] Because of firing, slight variation in shade or color is unavoidable and is inherent to the manufacturing process. This is not to be construed as a defect, so long as it doesn't disturb the overall aesthetics. Also, variations in design or colour or shade that are intentionally introduced and spots or colours introduced for decorative purposes are not to be considered as a defect.

[3] For commercial and high traffic applications it is recommended to use higher class than the minimum class prescribed in this standard.

[4] Certain decorative effects may have a tendency to craze. These shall be identified by the manufacturer, in which case the crazing test is not applicable.

## 8 MARKING AND DESIGNATION

### 8.1 Marking

Ceramic tiles and/or their packaging shall be marked with the following:

a) Name and address of the manufacturer and/or trade-mark and the country of origin,
b) Batch number/date of manufacture, and
c) Designation of tiles as per **8.2**.

### 8.2 Designation

The tiles shall be designated by the following:

a) Classification (Group).
b) Nature of tile surface as glazed or unglazed denoted by GL or UGL.
c) Nature of the finish—Polished (P), Semi-polished (SP) or Unpolished (UP).
d) Nature of the edge finish—Rectified (R) or Un-rectified (UR).
e) Modular (M) / coordinating size or non-modular (NM) / nominal size (work size).

For example, a glazed unpolished and un-rectified pressed tile of water absorption group B III having modular dimension 15 cm × 15 cm and work size 148 mm × 148 mm shall be designated as:

B III, GL UP UR M 15 cm × 15 cm (W 148 mm × 148 mm)

### 8.3 BIS Certification Marking

The tiles may also be marked with the Standard Mark.

**8.3.1** The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act,* 1986 and the Rules and Regulations made thereunder. The details of conditions under which a licence for use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

# ANNEX A

(*Clause* 2)

## LIST OF REFERRED INDIAN STANDARDS

| *IS No.* | *Title* |
|---|---|
| 13630 | Ceramic tiles — Methods of test, sampling and basis for acceptance |
| (Part 1) : 2006 | Determination of dimensions and surface quality (*first revision*) |
| (Part 2) : 2006 | Determination of water absorption and bulk density (*first revision*) |
| (Part 3) : 2006 | Determination of moisture expansion using boiling water — Unglazed tiles (*first revision*) |
| (Part 4) : 2006 | Determination of linear thermal expansion (*first revision*) |
| (Part 5) : 2006 | Determination of resistance to thermal shock (*first revision*) |
| (Part 6) : 2006 | Determination of modulus of rupture and breaking strength (*first revision*) |
| (Part 7) : 2006 | Determination of chemical resistance — Unglazed tiles (*first revision*) |
| (Part 8) : 2006 | Determination of chemical resistance — Glazed tiles (*first revision*) |
| (Part 9) : 2006 | Determination of crazing resistance — Glazed tiles (*first revision*) |
| (Part 10) : 2006 | Determination of frost resistance (*first revision*) |
| (Part 11) : 2006 | Determination of resistance of surface abrasion — Glazed tiles (*first revision*) |
| (Part 12) : 2006 | Determination of resistance to deep abrasion — Unglazed tiles (*first revision*) |
| (Part 13) : 2006 | Determination of scratch hardness of surface according to Mohs (*first revision*) |
| (Part 14) : 2006 | Determination of impact resistance by measurement of coefficient of restitution |
| (Part 15) : 2006 | Ceramic tiles — Sampling and basis for acceptance |
| 13712 : 2006 | Ceramic tiles — Definitions, classifications, characteristics and marking |

# ANNEX B

## (*Foreword*)

## COMMITTEE COMPOSITION

Flooring, Wall Finishing and Roofing Sectional Committee, CED 5

| *Organization* | *Representative(s)* |
|---|---|
| In Personal Capacity (*L/109, Sarita Vihar, New Delhi*) | Shri Ashok Khurana **(*Chairman*)** |
| Building Materials & Technology Promotion Council, New Delhi | Shri S. K. Gupta<br>Shri Pankaj Gupta (*Alternate*) |
| Carborundum Universal Limited, Chennai | Shri R. Rajagopalan<br>Dr N. Ramasubramanian (*Alternate*) |
| Central Building Research Institute, Roorkee | Shri S. K. Singh<br>Shri Achal Kumar Mittal (*Alternate*) |
| Central Glass & Ceramic Research Institute, Naroda | Dr Satyendra Nath Misra |
| Central Public Works Department, New Delhi | Shri Rajesh Kumar Kaushal<br>Shri Arun Kumar Tyagi (*Alternate*) |
| Central Road Research Institute, New Delhi | Dr A. K. Misra<br>Dr Rakesh Kumar (*Alternate*) |
| Choksi Laboratories Limited, Indore | Shri R. D. Mathur<br>Shri Ramesh Basappa (*Alternate*) |
| Construction Chemicals Manufacturers Association, Navi Mumbai | Shri Upen Patel<br>Shri Samir Surlaker (*Alternate*) |
| Construction Industry Development Council, New Delhi | Shri P. R. Swarup<br>Shri Ravi Jain (*Alternate*) |
| Delhi Development Authority, New Delhi | Chief Engineer (DWK)<br>Superintending Engineer (P) (*Alternate*) |
| Directorate General of Border Roads, New Delhi | Col Indra Kumar Jaggi |
| Engineers India Limited, New Delhi | Shri J. K. Bhagchandani<br>Shri S. Majumdar (*Alternate*) |
| Grasim Industries Limited, Mumbai | Shri B. Kumar |
| Gyan Construction Company, Mumbai | Representative |
| H.R. Johnson (India) Limited, Dewas | Shri G. S. Patnaik<br>Shri Arun Rao (*Alternate*) |
| Indian Council of Ceramic Tiles & Sanitaryware, New Delhi | Shri G. P. Sharma<br>Kumari Bindu Rajkumar (*Alternate*) |
| Institution of Engineers (India), New Delhi | Shri K. K. Kapila |
| Lloyd Insulation (India) Pvt Limited, New Delhi | Shri Mohit Khanna<br>Shri K. K. Mitra (*Alternate*) |
| Masonry Producer Association of India, Chennai | Shri T. S. Murli<br>Dr Christopher Samuel (*Alternate*) |
| Military Engineer Services, Engineer-in-Chief's Branch, New Delhi | Shrimati Mala Mohan<br>Shrimati Namrata Kohli (*Alternate*) |
| Modern Tiles & Marble, New Delhi | Shri Subhash Kapoor<br>Shri Kameswar Rau (*Alternate*) |
| Mumbai Municipal Corporation (BMC), Mumbai | Representative |
| Municipal Corporation of Delhi (MCD), New Delhi | Dr S. Ramesh |
| National Council for Cement and Building Materials, Ballabgarh | Shri S. K. Breja |
| National Highways Authority of India, New Delhi | Shri S. C. Jindal<br>Shri R. P. Khandelwal (*Alternate*) |
| National Test House (NR), Kolkata | Shri D. V. S. Prasad<br>Shri Aloke Dev (*Alternate*) |
| National Tiles Corporation, Panchkula | Shri Prem Chand Gupta<br>Shri S. R. Garg (*Alternate*) |

| *Organization* | *Representative(s)* |
|---|---|
| Premier Polyfilm Limited, Ghaziabad | Dr Sanjeev K. Verma<br>Shri R. K. Narad (*Alternate*) |
| Research, Designs and Standards Organization, Lucknow | Executive Director (Works)<br>Shri Ashutosh Kumar (*Alternate*) |
| Responsive Industries Limited, Mumbai | Shri Rishabh Agarwal<br>Shri Abhishek Agarwal (*Alternate*) |
| Shriram Institute of Industrial Research, New Delhi | Dr P. K. Kaicher<br>Dr (Shrimati) Laxmi Rawat (*Alternate*) |
| Super Tiles and Marble Private Limited, Mumbai | Shri Ashok Rajpurohit<br>Shri Sudhakar Modi (*Alternate*) |
| Xebec Design and Facilities Private Limited, New Delhi | Shri Deepak Gahlowt<br>Shri Samir Banerji (*Alternate*) |
| BIS Directorate General | Shri B. K. Sinha, Scientist ‘E’ and Head (CED)<br>[Representing Director General (*Ex-officio*)] |

*Member Secretary*
Shri Srikanth Yajjala
Scientist ‘B’ (CED), BIS

(*Continued from second cover*)

to surface abrasion, co-efficient of linear thermal expansion, thermal shock resistance, crazing resistance and Impact resistance have been specified.

A small quantity of tiles continues to be produced in the $6 < E \leq 10$ percent water absorption category, which was earlier omitted, has now been re-introduced in the current revision as Group B II b. As a consequence, the $3 < E \leq 6$ percent is re-designated as Group BII a, instead of Group BII.

The following major changes have been made in this revision:

a) Tables of modular and non-modular sizes have been updated with the prevailing industry standards and current customer size preferences.
b) Dimensional tolerance has been specified separately for rectified and unrectified tiles.
c) Modulus of rupture and breaking strength values have been modified to reflect the changes in compositions as a result of use of local materials and to align with ISO standard.
d) Additional properties like impact resistance and co-efficient of friction (only for tiles intended for use on floors) have incorporated.
e) Requirement of co-efficient of linear thermal expansion has been modified.
f) Abrasion and crazing resistance and limits on moisture expansion has been specified for all grades.
g) Coefficient of friction and impact resistance has been defined for all classes of files.

The composition of the Committee responsible for the formulation of the standard is given in Annex B.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

**Bureau of Indian Standards**

BIS is a statutory institution established under the *Bureau of Indian Standards Act*, 1986 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

**Copyright**

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Director (Publications), BIS.

**Review of Indian Standards**

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards : Monthly Additions'.

This Indian Standard has been developed from Doc No.: CED 05 (7888).

**Amendments Issued Since Publication**

| Amend No. | Date of Issue | Text Affected |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

BUREAU OF INDIAN STANDARDS

**Headquarters:**

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
*Telephones* : 2323 0131, 2323 3375, 2323 9402 *Website*: www.bis.org.in

| **Regional Offices:** | | *Telephones* |
|---|---|---|
| Central | : Manak Bhavan, 9 Bahadur Shah Zafar Marg<br>NEW DELHI 110002 | 2323 7617<br>2323 3841 |
| Eastern | : 1/14 C.I.T. Scheme VII M, V. I. P. Road, Kankurgachi<br>KOLKATA 700054 | 2337 8499, 2337 8561<br>2337 8626, 2337 9120 |
| Northern | : Plot No. 4-A, Sector 27-B, Madhya Marg, CHANDIGARH 160019 | 26 50206<br>265 0290 |
| Southern | : C.I.T. Campus, IV Cross Road, CHENNAI 600113 | 2254 1216, 2254 1442<br>2254 2519, 2254 2315 |
| Western | : Manakalaya, E9 MIDC, Marol, Andheri (East)<br>MUMBAI 400093 | 2832 9295, 2832 7858<br>2832 7891, 2832 7892 |

**Branches:** AHMEDABAD. BENGALURU. BHOPAL. BHUBANESHWAR. COIMBATORE. DEHRADUN. DURGAPUR. FARIDABAD. GHAZIABAD. GUWAHATI. HYDERABAD. JAIPUR. JAMMU. JAMSHEDPUR. KOCHI. LUCKNOW. NAGPUR. PARWANOO. PATNA. PUNE. RAIPUR. RAJKOT. VISAKHAPATNAM.

Published by BIS, New Delhi

# AMENDMENT NO. 1 OCTOBER 2018
# TO
# IS 15622 : 2017 PRESSED CERAMIC TILES — SPECIFICATION

*(First Revision)*

[*Page* 9, *Table* 9, *Sl No*. (iii) (a), *cols* (3), (4) and (5)] — Substitute the following for the existing entries:

| **Nominal Size (N)** | | **Method of Test, Ref to Part of IS 13630** |
|---|---|---|
| $N \leq 20$ cm (3) | $N > 20$ cm (4) | (5) |
| Class 1, *Min* | | Part 8 |
| Class 2, *Min* | | Part 7 |

(CED 05)

Publication Unit, BIS, New Delhi, India